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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,213	09/10/2003	Katsuhiko Miya	P/1250-261	5700
2352	7590	06/29/2007		
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403				
			EXAMINER HECKERT, JASON MARK	
			ART UNIT 1746	PAPER NUMBER
			MAIL DATE 06/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/659,213	<b>Applicant(s)</b> MIYA ET AL.	
	<b>Examiner</b> Jason Heckert	<b>Art Unit</b> 1746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 12-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 14, 23, 32 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12, 13, 15-22, 24-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see page 23, filed 5/14/07, with respect to rejections under 35 U.S.C. 112 have been fully considered and are persuasive. The rejection of claims 13 and 16 have been withdrawn.
2. Applicant's arguments in regards to the rejections under 35 U.S.C. 103(a) filed 5/14/07 have been fully considered but they are not persuasive. Applicant appears to be arguing against the prior art individually, however when viewed in combination, they disclose the features of the applicant's invention. In regards to claim 1, Shinbara discloses a guide part with a first cylindrical portion, an inclined part extending obliquely downward toward the holding part, and a second cylindrical part extending vertically downward from the lower end of the inclined part. '294 discloses a cylindrical portion branching off of an inclined portion, corresponding to the applicant's third cylindrical part. See figure 7. In regards to claim 10, the guide parts do form passages corresponding to the overlying guide parts. For example, part 31a corresponds to fluid outlet 27a, but also forms the part of the guide corresponding to outlet 27b. Also, 31a is over a cylindrical part that forms passages 24a and 24b. In regards to claims 19 and 28, the mere limitation of a "curve" does present novel structure or function over the prior art. The combination of known guard structures, as presented, would provide equivalent functionality to the applicant's invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-4, 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. and further in view of Japanese Patent Application Laid-Open No. 11-87294 ('294). Sumnitch discloses the components of a substrate processing apparatus comprising a substrate holding part 10, a rotary part 7, a liquid supply 42 with conduits 44 and 45, a plurality of guide parts 36-38, a plurality of guide passages 39-41, a position adjusting part as indicated by 22, wherein the multiple guide/recovery parts are stacked. Sumnitch also discloses that the processing liquids can consist of a rinse agent, such as water, and chemical agents, such as acids. These features are not exclusive to Sumnitch and are well known in the art. '294 is an example of another substrate processing apparatus that has similar components. Sumnitch does not disclose the distinct structure of the guide parts of the claimed invention. Liquid guide parts are well known in the art to capture the liquid flying from the substrate. It would be obvious to implement any of the many known styles of guide part since they are functional equivalents. Shinbara et al. discloses a guide part wherein there is a first cylindrical part arranged coaxially with a substrate holding part, an inclined part extending obliquely downwardly toward said substrate holding part, and a second cylindrical part extending vertically downwardly from the lower end of said inclined part,

wherein an internal diameter of said first cylindrical part is greater than the internal diameter of the second cylindrical part. Hence, the style of guide part disclosed in claim 1 and 10 is known. Furthermore '294 discloses the use of a guide part that extends obliquely upward toward the substrate holder as well as liquid guide passages formed between adjacent guide parts. '294 also discloses a cylindrical portion branching off of an inclined portion, corresponding to the applicant's third cylindrical part. See figure 7. In regards to claim 10, the guide parts do form passages corresponding to the overlying guide parts. For example, part 31a corresponds to fluid outlet 27a, but also forms the part of the guide corresponding to outlet 27b. Also, 31a is over a cylindrical part that forms passages 24a and 24b. It is clear in the design of '294, because the space between the respective guide parts and substrate holding part does *not* get smaller, the problem of polluting particles caused by bounce would not occur. It would have been obvious, at the time of the invention to modify Sumnitch, and include multiple guide parts of the style Shinbara et al. discloses in place of the multiple guide parts of Sumnitch. Furthermore, it would be obvious to include an additional guide part extending obliquely upward in the direction of the substrate holder to prevent splashing, as disclosed by '294, and further orient the guide/recovery parts in a way so that a liquid passage is formed in between the adjacent guide parts to create a more compact recycle system.

5. In regards to claim 3-4 and 12- 13, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding

waste material from the first recovery tank. Neither Sumnitch, Shinbara et al., nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

6. Claims 6-9, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore, flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

7. Claims 19-20, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 and further and further in view of Ono et al. As stated previously, Sumnitch discloses many of the features common to substrate processing apparatuses throughout the art. However, he does not disclose a

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four stage splash guard or a lifting mechanism. Ono et al. discloses a four stage splash guard 3 that can be raised or lowered. This feature is not exclusive to Ono et al., and can be found throughout the art. In regards to the second guard being curved, changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). The prior art teaches all of the limitations of the guards and guides as claimed, and the mere change of shape is not considered to be patentably distinct. It would have been obvious to modify Sumnitch in view of Shinbara et al. and '294, as stated above and further include a fourth guard and mobilize the guards in a vertical direction, as disclosed by Ono et al., in order to allow for the introduction of a fourth fluid and allow for simple interchangeability of the guide parts.

8. In regards to claim 21-22 and 30- 31, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding waste material from the first recovery tank. Neither Sumnitch, Shinbara et al., nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

9. Claims 24-27 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 in view of Ono et al. and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a

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substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore, flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

***Allowable Subject Matter***

10. Claims 5, 14, 23, and 32 are allowed.

***Conclusion***

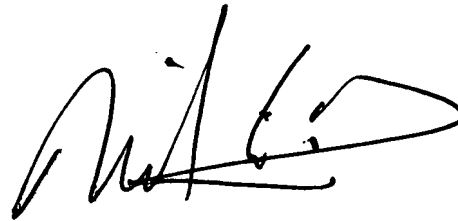
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Heckert whose telephone number is (571) 272-2702. The examiner can normally be reached on Mon. to Friday, 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH

A handwritten signature in black ink, appearing to read 'Michael Barr', with a large, sweeping loop at the end.

**MICHAEL BARR**  
**SUPERVISORY PATENT EXAMINER**